REMARKS

Claims 3 and 5-10 remain in this application. Claims 1, 2 and 4 have been cancelled, and claims 5-10 have been added.

Reconsideration of the subject patent application and allowance of all of the claims is respectfully requested in view of the foregoing amendments and the following remarks.

Rejections Under 35 U.S.C. § 103

Claim 3 stands rejected under 35 U.S.C. § 103 as being obvious over Hirota (EP Application 0589609) in view of Hodge (U.S. Patent No. 2,567,560) and Sakai et al. (U.S. Patent No. 5,322,574). Inasmuch as the rejection applies to the claims as amended, Applicant respectfully traverses the rejection.

The Examiner asserts that Hirota discloses a method of optimizing electrical conductivity and strength of copper alloy containing 10-20 atomic % silver by rapidly cooling the cast article followed by cold-working and annealing at 250-350°C for more than one hour. Additionally, the Examiner asserts that Hirota discloses additional cold-working and heat treatment steps, and that "cold-working" is analogous to "rolling" in view of Hodge. Finally, the Examiner asserts that Sakai et al. discloses annealing treatments of 300-500°C and multiple stage cold-working and heat treatments conducted in a vacuum or inert gas atmosphere. The Examiner asserts that determining optimum annealing conditions for individual workpieces is a matter of routine experimentation and not a patentable distinction over the prior art.

Claim 3 of the present invention, as amended, recites a method of producing a high-strength, high-conductivity Cu-Ag alloy plate by casting an ingot with 4-32 atomic % silver and the balance copper, followed by multiple cold rolling and annealing steps at 300-500°C for 0.5 to 5 hours, a finish rolling step, and finally, the step of annealing the plate at 150-200°C for 0.5 to 5 hours.

None of the asserted references, either alone or in combination, recites the method as claimed above. The present invention is directed to a method for producing an alloy plate, while

the cited references are directed to a method for producing alloy rods and/or wires. The Examiner asserts that determining optimum annealing conditions for individual workpieces is a matter of routine experimentation and not a patentable distinction over the prior art; Applicant respectfully disagrees. The process for determining annealing conditions for different workpieces is not "routine" in the art. The conditions disclosed and claimed in the present invention cannot be made by simple calculation, as they require significant research and numerous experiments. There are fundamental differences in the processing of rods, as disclosed in the prior art, and plates, as claimed in the present invention. In order to achieve desirable strength properties when processing rods, workability is generally high. Hirota et al. illustrates this; all of the examples in tables 1 and 2 have diameter reductions, i.e. workabilities, of between 93.8 and 99.7 % at each cold working step. In contrast, the methods described and claimed in the present invention allow desirable strength properties to be achieved using much lower workabilities. For example, claim 5 is directed to processing alloy plate with individual workabilities of 40-76%. Desirable strength properties cannot be achieved on alloy plate with these low workability values using the processing methods known in the art, and, in particular, as described in Hirota et al. These differences are assumed to be due to the fact that both deformation resistance and working resistance of a material are greater when rolling a plate than when wire-drawing a rod. Thus, Applicant asserts that it is not a matter of routine experimentation to determine optimum annealing conditions for an alloy plate, and that therefore claims 3 and 5 are patentable over the cited references, which apply to processing of rods. Applicant therefore requests that the rejection of claim 3 be withdrawn, and requests that favorable consideration be given to claim 5 upon its review.

New Claims 6-10

New claims 6-10, directed to a method for determining the optimum temperature for annealing a Cu-Ag alloy plate, have been added. For the reasons discussed above, Applicant asserts that it would not be a matter of routine experimentation to perform the method described in these claims. None of the cited references disclose all of the limitations in these claims. None

of the examples cited in the prior art explain how or why a particular heat treatment temperature was selected; in all examples the heat treatment temperature is a "round" number (e.g., 250, 300, 400, 425 or 450°C), indicating that precise selection of heat treatment temperature has not been performed or even attempted. Thus, Applicant asserts that it would not have been obvious to determine the optimum annealing temperature as described in the specification and claimed in claims 5-10. Applicant therefore requests that favorable consideration be given to these claims.

Accordingly, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

By _____

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